

## ABSTRACT OF THE INVENTION

The present invention relates to methods for identifying compounds that modulate premature translation termination and/or nonsense-mediated mRNA decay by screening and identifying compounds that modulate the post-transcriptional expression of  
5 any gene with a premature translation stop codon. The invention particularly relates to using any gene encoding a premature stop codon to identify compounds that modulate premature translation termination and/or nonsense-mediated mRNA decay. A compound that modulates premature translation termination and/or nonsense-mediated mRNA decay of  
10 a target gene is identified using standard methods known in the art to measure changes in translation or mRNA stability of the gene product or mRNA of the gene with the premature stop codon. The methods of the present invention provide a simple, sensitive assay for high-throughput screening of libraries of compounds to identify pharmaceutical leads.